

THREE NEW TAXA OF ERICACEAE FROM INDIA

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A B S T R A C T

Two new varieties of *Gaultheria* L. viz., *G. fragrantissima* Wall. var. *obovata* Panda & Sanjappa and *G. trichophylla* Royle var. *ovata* Panda & Sanjappa, and one new subspecies of *Vaccinium* L. viz., *V. dendrocharis* Hand.-Mazz. subsp. *talle* Panda & Sanjappa, are described and illustrated.

INTRODUCTION

During the course of revisionary work on the family Ericaceae in India under "Flora of India Project", several field trips in the Eastern Himalayas and North-eastern India (Meghalaya, Nagaland and Manipur) as well as herbarium visit to several Indian herbaria (CAL, BSIS, DD, BSD, ASSAM, BSHC, ARUN and APFH) were undertaken. This resulted in discovery of two new taxa of *Gaultheria* L. viz., *G. fragrantissima* Wall. var. *obovata* from Kotagiri of Nilgiris district in Tamil Nadu and *G. trichophylla* Royle var. *ovata* from Dzongri of West district in Sikkim and one new subspecies of *Vaccinium* L. viz., *V. dendrocharis* Hand.-Mazz. subsp. *talle* from Talle valley of Lower Subansiri district in Arunachal Pradesh. Three new taxa are provided with detailed description and illustration.

1. *Gaultheria fragrantissima* Wall. var. *obovata* Panda & Sanjappa, var. nov. (Fig. 1)

A variety *fragrantissima* similis, sed foliis valde obovatis, pedicellis longis (7-8 mm) et non apicem bibracteolatis differt. Typus : India, Tamil Nadu, Nilgiris district, Kotagiri, 21.03.1944, J. Sinclair 20 (holotypus: CAL !).

G. fragrantissima Wall. var. *obovata* is closely allied to the var. *fragrantissima*, but differs from it in having always obovate leaf blades, comparatively long pedicels (7-8 mm long) and subapical to median bracteoles on the pedicel. By contrast, var. *fragrantissima* showed ovate-elliptic, oblong-elliptic, ovate-lanceolate to rarely ovate leaf blades, comparatively short pedicels (1-4 mm long) and always apical bracteoles on the pedicel.

Type : India : Tamil Nadu, Nilgiris district, Kotagiri, 21.03.1944, J. Sinclair 20 (holotype : CAL !).

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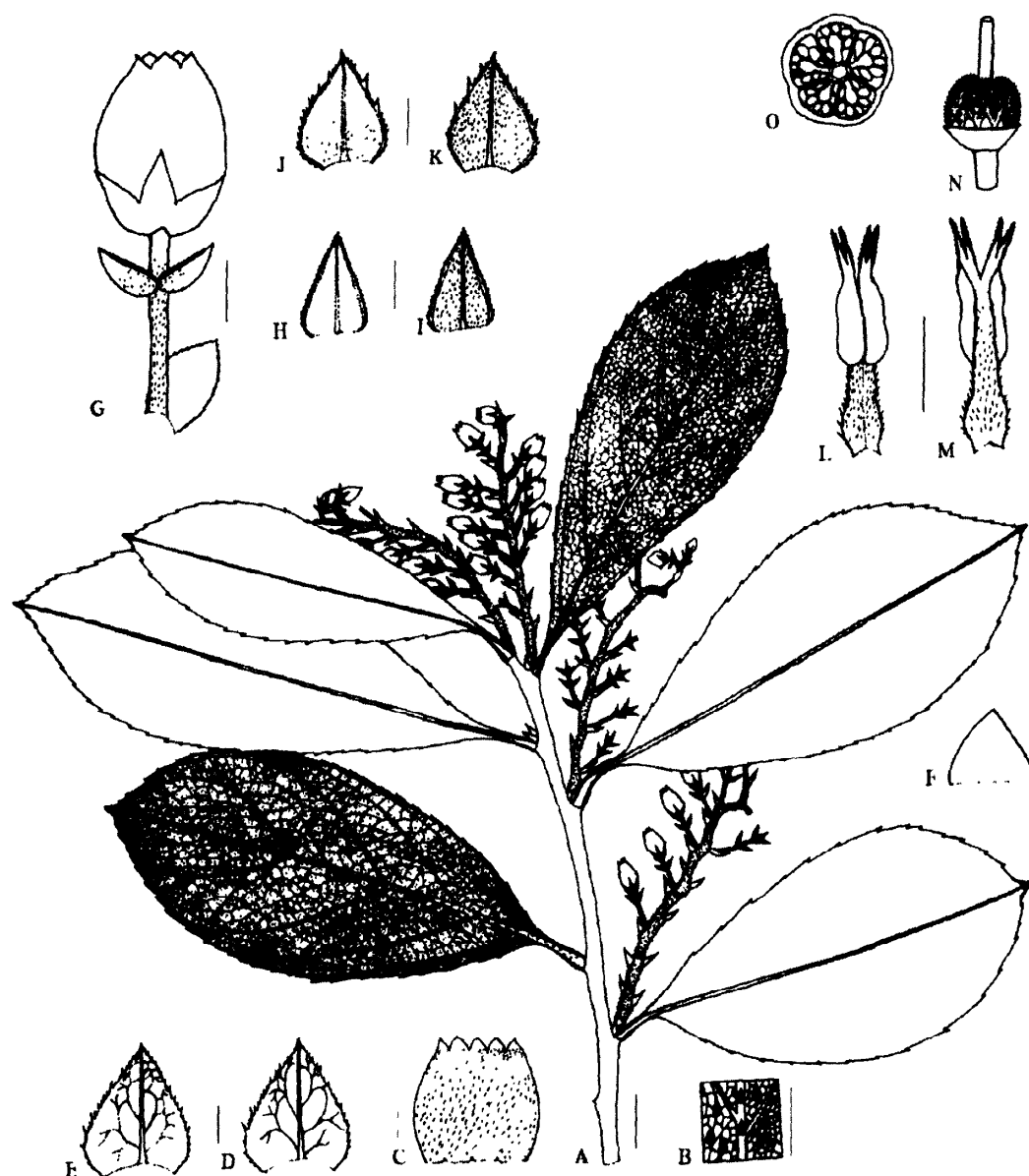


Fig. 1 : *Gaultheria fragrantissima* Wall. var. *obovata* Panda & Sanjappa :

A. habit; B. abaxial leaf (part magnified); C. corolla split open; D – E. bracts; F. corolla lobe; G. flower; H – I. calyx lobes; J – K. bracteoles; L – M. stamens; N. pistil; O. ovary (t. s.). Scale bars: A = 1 cm; B = 3 mm; C, G = 2 mm; D, E, H – O = 1 mm (A – O: drawn from *Sinclair* 20). Drawn by S. Panda.

Stout, erect shrub. Stem and branchlets terete, glabrous. Leaves coriaceous, lamina obovate, 60-105 × 24-43 mm, serrate at margin with some short cilia, narrowly cuneate at base, mucronate at apex, glabrous above, punctate beneath; venation brochidodromous with 4-5 pairs lateral veins, obscure above, conspicuous beneath; petioles stout, 8-12 mm long, glabrous. Racemes axillary, 45-70 mm long, 11-14-flowered, puberulous. Flowers 12-14 mm long; pedicels 7-8 mm long, puberulous; bract 1, basal, broadly ovate, *ca* 4 × 2.5 mm, ciliate at margin, acute at apex, glabrous; bracteoles 2, opposite, subapical to median on the pedicel, broadly ovate, *ca* 2.5 × 2 mm, ciliate at margin, acute at apex, glabrous. Calyx lobes ovate-triangular, *ca* 2 × 1.5 mm, ciliolate at margin, acute at apex, glabrous outside, puberulous inside. Corolla urceolate, *ca* 5 × 4 mm, glabrous outside, pilose inside, lobes ovate, minute. Stamens 10, *ca* 2.5 mm long, loosely epipetalous; filaments slender, *ca* 1 mm long, puberulous, dilated at base; anther lobes *ca* 1 mm long, glabrous, each lobe with 2 minute awns. Pistil *ca* 3.5 mm long; ovary globose to subglobose, *ca* 1.5 × 2 mm, tomentose, ovules numerous on axile placenta in each locule; disc minutely 10-dentate; style slender, *ca* 2 mm long, glabrous. Fruits not seen.

Fl. : March.

Distrib. : India : Tamil Nadu (Kotagiri).

Etymology : The variety is named after its obovate leaf shape.

2. *Gaultheria trichophylla* Royle var. *ovata* Panda & Sanjappa, var. nov.

(Fig. 2)

A variety *eciliata* Rae & D. G. Long similis, sed foliis marginibus ciliatis, 3-8 × 2.5-4.5 mm differt. Typus: India, West Sikkim, Dzongri, 4350 m, 15.05.2002, S. Panda 29949 (holotypus & isotypi : CAL !).

Variety *ovata* is closely allied to the variety *eciliata* Rae & D. G. Long, but differs from it in having ciliate leaf margin and comparatively larger leaf-blades (3-8 × 2.5-4.5 mm). By contrast, var. *eciliata* showed eciliate leaf margin and comparatively smaller lamina (2-5 × 0.5-3 mm).

Type : India : West Sikkim, Dzongri, 4350 m, 15.05.2002, S. Panda 29949 (holotype and isotypes: CAL !).

Procumbent, dwarf shrub, 3-5 cm long, forming a mat in alpine pasture; stem and branches minutely rusty-red puberulous. Leaves compact, coriaceous, lamina ovate to broadly ovate, 3-8 × 2.5-4.5 mm, ciliate at margin, cilia *ca* 1 mm long, rounded at base, acute at apex, glabrous, dark green above, light green with pinkish stripe beneath; venation obscure; petioles *ca* 1 mm long, glabrous. Racemes solitary axillary. Flowers *ca* 1 cm long; pedicels pale pinkish, *ca* 3 mm long, glabrous; bracteoles 2, opposite, apical on the pedicel, light green with pinkish stripe, broadly ovate, *ca* 2.5 × 3 mm, ciliolate at margin, subacute to rounded at apex, glabrous. Calyx lobes light green, *ca* 3 × 1 mm, entire at margin, acute at apex, glabrous. Corolla globose-campanulate, pale pinkish-white, *ca* 6 mm

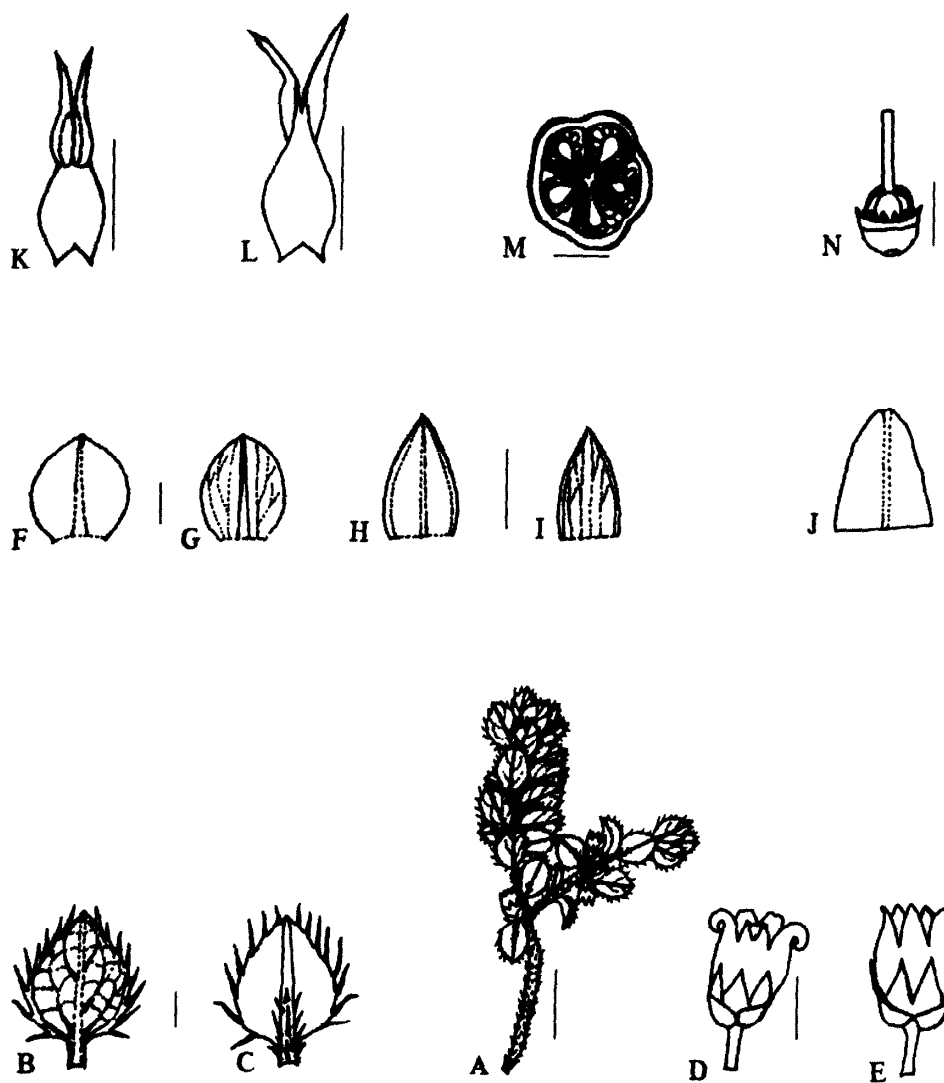


Fig. 2 : *Gaultheria trichophylla* Royle var. *ovata* Panda & Sanjappa. :

A. habit; B – C. leaves; D – E. flowers; F – G. bracteoles; H – I. sepals; J. corolla lobe; K – L. stamens; M. ovary (t. s.); N. pistil. Scale bars: A = 1 cm; B, C, F, G, J, K, L, M = 1 mm; D, E = 4 mm; H, I, N = 2 mm (A – N: drawn from *S. Panda* 29949).

long, glabrous, lobes ovate-oblong, *ca* 3 × 1.5 mm, entire at margin, rounded at apex, glabrous. Stamens 9 or 10, *ca* 2 mm long; filaments light green, *ca* 2 mm long, dilated at middle, glabrous; anther lobes dark brown, minute, each lobe with single minute apical awn. Pistil *ca* 3.5 mm long; ovary light green, globose, *ca* 1 × 2 mm, glabrous, ovules numerous on axile placenta in each locule; disc minutely 10-dentate; style light green, slender, *ca* 2.5 mm long, glabrous; stigma truncate. Fruits not seen.

Fl. : May.

Distrib. : India : Eastern Himalayas (Sikkim).

Habitat : This variety grows gregariously in loose rocky soils of alpine meadows, forming a green mat at an altitude of about 4350 m with *Gaultheria pyroliifolia*, *Cassiope fastigiata*, *Rhododendron lepidotum*, *R. anthopogon* and *R. setosum*.

Etymology : The variety is named after its predominant character ovate-shaped leaves.

Additional specimens examined : East Sikkim: Nathu La, 16000 ft, 02.11.1909, *G. H. Cave* 2792; North Sikkim: Yumchho La, 15000 ft, 12.07.1909, *Smith & Cave* 1325; West Sikkim: Dzongri, 13000 ft, 22.06.1892, *G. A. Gammie* 192; Dzongri, 14000 ft, August, 1881, *G. Watt* 5789; Dzongri, 13200 ft, 22.06.1993, *S. Pradhan* 15096.

3. *Vaccinium dendrocharis* Hand.-Mazz. subsp. **talle** Panda & Sanjappa, *sp. nov.* (Fig. 3)

Subspecies valde affinis *V. dendrocharis* Hand.-Mazz. subsp. *dendrocharis*, sed foliis minoribus (9-12 × 3-5 mm), calycis segmentis eciliatis, corollis intus pilosis, stamina brevioribus (*ca* 2 mm longis) et fructibus 3-4 mm diametro differt, et *V. retusum* (Griff.) Hook. f. ex C. B. Clarke differt foliis, corollis et staminis brevioribus.

Typus : India, Arunachal Pradesh, Lower Subansiri district, Talle valley, near Lebya-Penggo Pass, 2725 m, May, 2002, *D. Banik & M. Lohlen* 27995 (holotypus : CAL !); between Talle valley and Lebya-Penggo Pass, 2400 m, 31.12.2002, *S. Panda* 30848 (paratypus : CAL !).

The new subspecies is closely allied to *V. dendrocharis* Hand.-Mazz. subsp. *dendrocharis*, a Chinese subspecies, from which it differs in having comparatively smaller leaves (8-12 × 3-5 mm), eciliate calyx lobes, pilose corolla inside, short stamens (*ca* 2 mm long) and fruits with 3-4 mm in diameter. By contrast, subsp. *dendrocharis* showed comparatively larger leaves (10-22 × 4-9 mm), ciliated calyx lobes, glabrous corolla, comparatively longer stamens (*ca* 3.5 mm long) and fruits with 5-8 mm in diameter. The new subspecies also allied to *V. retusum* (Griff.) Hook. f. ex C. B. Clarke (a widely distributed species from India, Nepal, Bhutan, China and Myanmar), but differs in having comparatively smaller leaves, corolla and stamens. On the other hand, *V. retusum* showed larger leaves (18-37 × 7-15 mm), comparatively longer corolla (*ca* 5 mm long) and stamens (*ca* 4 mm long).

Type : India : Arunachal Pradesh, Lower Subansiri district, Talle valley, near Lebya-Penggo Pass, 2725 m, May, 2002, *D. Banik & M. Lohlen* 27995 (holotype : CAL !); between Talle valley and Lebya-Penggo Pass, 2400 m, 31.12.2002, *S. Panda* 30848 (paratype : CAL !).

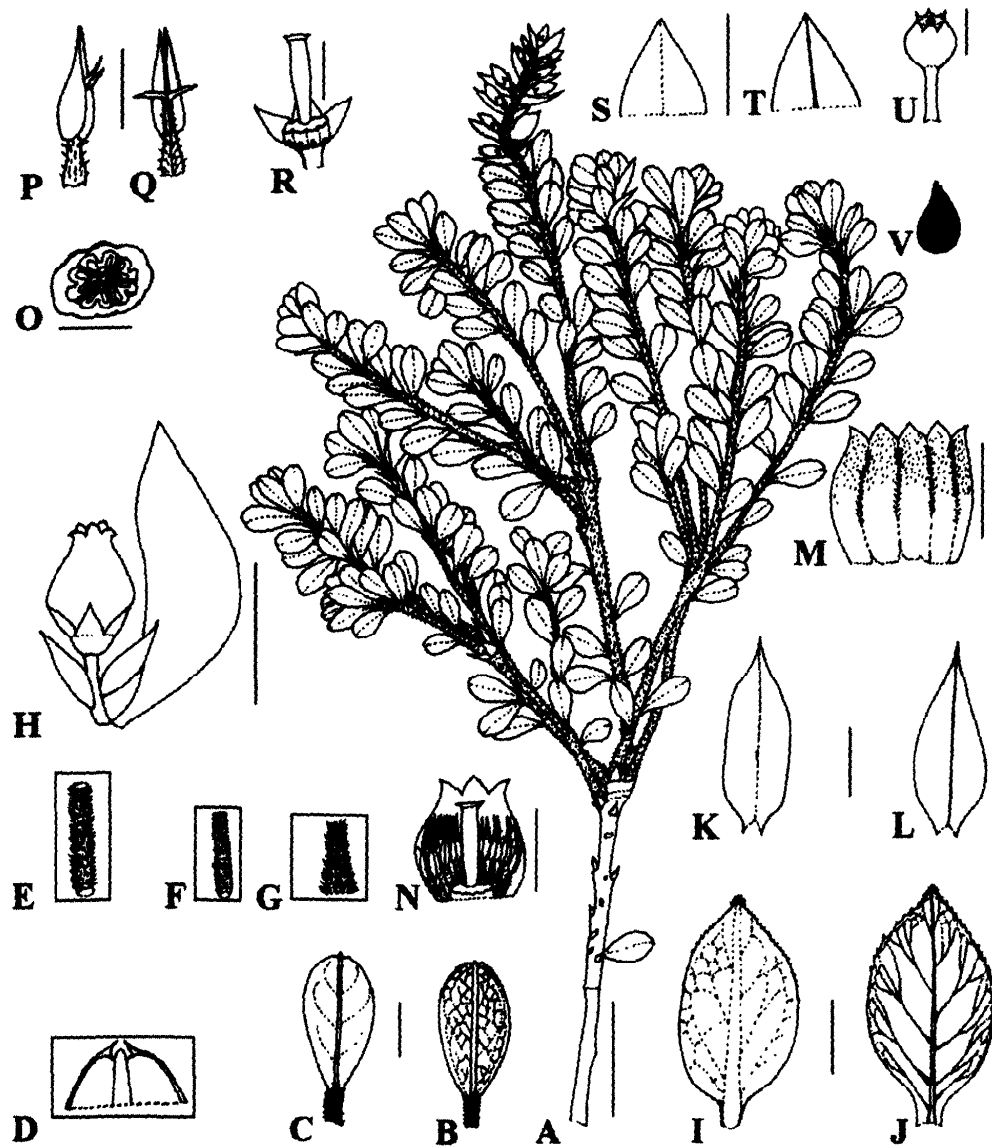


Fig. 3 : *Vaccinium dendrocharis* Hand.-Mazz. subsp. *talle* Panda & Sanjappa :

A. habit; B - C. leaves; D. leaf apex (part magnified); E. branchlet (part magnified); F. rachis (part magnified); G. petiole (magnified); H. flower; I - J. bracts; K - L. bracteoles; M. corolla split open; N. corolla split open showing stamens encircling the pistil; O. ovary (t. s.); P - Q. stamens; R. pistil; S - T. calyx lobes; U. fruit; V. seed. - Scale bars: A = 2 cm; B - C, H = 3 mm; I - J, M - N, R, U = 2 mm; K - L, O - Q, S - T = 1 mm (A - T : D. Banik & M. Lohlen 27995; U - V : S. Panda 30848).

Stout, erect epiphytic shrub, rarely on rocky slopes, 1-1.5 m high. Stem greyish-white, terete, profusely branched, glabrous or lenticellate; twigs terete, red to rusty-red, hispid-setulose. Leaves dense, coriaceous, lamina obovate or spatulate to rarely elliptic-obovate, 8-12 × 3-5 mm, entire with slightly revolute at margin, narrowly cuneate at base, retuse to rounded at apex, glabrous, darkgreen above, light green beneath; venation brochidodromous with 3-4 pairs lateral veins, conspicuous above, obscure beneath; petioles *ca* 1 mm long, setulose. Racemes pseudoterminal, perulate; rachis light green, 20-25 mm long, 10-13-flowered, puberulous. Flowers *ca* 6 mm long; pedicels greyish-white, *ca* 2 mm long, glabrous; bract 1, basal, caducous, dark pink, broadly elliptic, *ca* 7 × 5 mm, ciliate at margin, acute at apex, glabrous; bracteoles 2, subopposite, subbasal, light pink, elliptic-oblong to oblong, *ca* 3 × 1.5 mm, entire at margin, acuminate at apex, glabrous. Calyx lobes dark pink, ovate-triangular, *ca* 1 × 1 mm, entire at margin, acute at apex, glabrous. Corolla urceolate, dark pink, *ca* 3 × 2 mm, glabrous outside, pilose inside, lobes minute. Stamens 10, *ca* 2 mm long; filaments greyish-white, minute or *ca* 0.5 mm long, slender, pilose, slightly dilated at base; anthers brown, oblong, *ca* 1 mm long, glabrous, each lobe with single minute tubule and 2 equal, minute spurs at anther lobe-tubule junction. Pistil *ca* 4 mm long; ovary globose, light green, *ca* 1 × 1.5 mm, glabrous, 5-locular, ovules 6-8 on axile placenta in each locule; disc minutely 10-dentate; styles light green, *ca* 3 mm long, slender, glabrous; stigma truncate. Berry globose, dark purple, 3 - 4 × 3 - 4 mm with *ca* 3 mm long pedicel, glabrous. Seeds 20 - 30, light yellow, obconical, *ca* 1 mm long, scarious.

Fl. : April-May; January. *Fr.* : December-January.

Distrib.: India: Eastern Himalayas (Arunachal Pradesh); South-western China and Northern Myanmar.

Habitat : This subspecies grows gregariously as epiphytic on fallen tree trunks, rarely in rocky slopes in association with *Gaultheria fragrantissima*, *Leucothoe griffithiana* and *Vaccinium retusum* at altitudes ranging from 2400-2725 m.

Etymology : The subspecies is named after its type locality.

Additional specimens examined : Arunachal Pradesh : near Lebya-Penggo Pass, Talle valley, Lower Subansiri district, 2725 m, 31.12.2002, S. Panda 30849.

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भारत में इरिकेसी के तीन नये टैक्सा

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सार संक्षेप

गॉल्थेरिया के दो नये प्रभेद जी. फ्रैग्रेंटिसिमा वाल प्रभेद ओभोवेटा पांडा एवं संजप्पा तथा जी. ट्रिकोफाइला रॉयल प्रभेद ओवेटा पांडा एवं संजप्पा और वैक्सिनियम की नई उपजाति वी डेंड्रोकेरिस हैंड-मैज उपजाति टेले पांडा एवं संजप्पा का वर्णन एवं चित्र दिया गया है ।